

CLAIMS

Please amend Claims 1, 7-9, 17-19 and 26 as follows:

1. (Currently Amended) A method for transmitting data to a mobile device in a communication system, the mobile device being movable among one or more of a plurality of predefined coverage zones within the communication system, the method comprising:

storing coverage ~~zones~~ for zone area range data in a storage unit in at least one network switch in the communication system, the coverage ~~zones~~ zone area range data defining the geographic scope of coverage ~~for mobile devices~~ supported by each of the at least one network switch switches supporting a predefined coverage zone;

receiving location data from the mobile device;

encapsulating a data packet in an encapsulation packet, the encapsulation packet having a destination address mappable to the location data;

determining at least a portion of a network path to the device based on the location data and the coverage zone area range data;

decapsulating the encapsulated data packet at ~~the~~ a network switch supporting the mobile device within a predefined coverage zone; and

transmitting the data packet to the mobile device.

2. (Original) The method according to Claim 1, further comprising the steps of:

storing a first mapping between a unicast address of the mobile device and the location data corresponding to the device;

receiving a data packet from a terminal, the data packet including the destination address of the mobile device; and

using the first mapping to determine the location data of the device based on the destination address of the device.

3. (Original) The method according to Claim 1, wherein the location data is comprised of a routing domain.

4. (Original) The method according to Claim 1, wherein the location data is comprised of global positioning data.

5. (Original) The method according to Claim 2, wherein the determining function comprises evaluating a second mapping, the second mapping having the location data corresponding to the device and a respective multicast address to be used as the destination address of the encapsulation packet.

6. (Original) The method according to Claim 5, wherein the location data is comprised of a routing domain.

7. (Currently Amended) The method according to Claim 2, wherein the determining function comprises:

storing a second mapping, the second mapping having ~~a location data~~ coverage zone area range data corresponding to at least one network switch supporting a respective coverage zone and at least one communication interface to be used to transmit the encapsulation packet; and  
evaluating the second mapping to determine the at least one communication interface to be used to transmit the encapsulation packet based on the ~~location data~~ coverage zone area range data which includes the location data.

8. (Currently Amended) The method according to Claim 7, wherein the ~~location data~~ coverage zone area range is a range of global positioning coordinates and the location data includes global positioning data.

9. (Currently Amended) A system for transmitting data across a communication network from a terminal to a mobile device, the mobile device being movable among one or more of a plurality of predefined coverage zones within the system, the system comprising:

at least one first router supporting a predefined coverage zone, the at least one first router having at least one communication interface receiving location data from the mobile device, and a the predefined coverage zone comprising coverage zone area range data defining the geographic scope of coverage for mobile devices supportable by the at least one first router, ~~the at least one communication interface receiving location data from the mobile device~~; and

at least one second router having:

a storage unit storing coverage zone area range data of each of the first routers;

at least one communication interface, the at least one communication interface receiving the location data from the at least one first router and receiving a data packet from the terminal, the data packet including a unicast address of the mobile device; and

a central processing unit, the central processing unit executing functions including:

determining at least a portion of a network path to the device based on the location data and the stored coverage zone area range data; and

using the portion of the determined network path to send, via the at least one communication interface, the data packet to the at least one first router which received the location data from the device.

10. (Previously Presented) The system according to Claim 9, wherein the central processing unit of the at least one second router further executes a function including storing a first mapping in the storage unit between the unicast address corresponding to the mobile device and the location data corresponding to the device.

11. (Original) The system according to Claim 9, wherein the location data is comprised of a routing domain.

12. (Original) The system according to Claim 9, wherein the location data is comprised of global positioning data.

13. (Original) The system according to Claim 9, further comprising a location updating unit, the location updating unit receiving the location data from the at least one first router and transmitting the location data to the at least one second router.

14. (Original) The system according to Claim 10, wherein the central processing unit in the at least one second router further executes a function including encapsulating the data packet in an encapsulation packet, and wherein the at least one first router decapsulates the data packet.

15. (Original) The system according to Claim 14, wherein the determining function is comprised of retrieving a second mapping from the storage unit, the second mapping having the location data corresponding to the device and a respective multicast address interface to be used as the destination address of the encapsulated packet.

16. (Original) The system according to Claim 15, wherein the location data is comprised of a routing domain.

17. (Currently Amended) The system according to Claim 10, wherein the storage unit stores a second mapping, the second mapping having ~~a location data range corresponding to the coverage zone~~ area range data for a respective first router and at least one corresponding communication interface on the second router to be used to transmit the encapsulation packet, and wherein the determining function includes evaluating the second mapping to determine the

at least one communication interface to be used to transmit the encapsulation packet based on the ~~location data~~ coverage zone area range data which includes the location data.

18. (Currently Amended) The system according to Claim 17, wherein the ~~location data~~ coverage zone area range is a range of global positioning coordinates and the location data includes global positioning data.

19. (Currently Amended) A network switch for a communication network in which the network switch facilitates communication between a mobile device and a terminal coupled to the communication network, the network switch comprising:

at least one communication interface, the at least one communication interface receiving:

location data corresponding to the device;

coverage zone ~~information corresponding to~~ area range data for at least one network switch ~~in~~ supporting a predefined coverage zone within the communication network, the coverage zone ~~information~~ area range data defining the geographic scope of coverage for mobile devices supported by each respective network switch supporting a predefined coverage zone; and

a data packet from the terminal, the data packet including a destination unicast address of the device; and

a central processing unit, the central processing unit executing functions including:

determining at least a portion of a network path to the device based on the location data and the coverage zone ~~information~~ area range data; and

using the portion of the determined network path to send, via the at least one communication interface, the data packet to the device.

20. (Original) The network switch according to Claim 19, further comprising a storage unit, wherein the central processing unit further executes a function including storing a first mapping in the storage unit between the destination unicast address corresponding to the device and the location data corresponding to the device.

21. (Original) The network switch according to Claim 19, wherein the location data is comprised of a routing domain.

22. (Original) The network switch according to Claim 19, wherein the location data is comprised of global positioning data.

23. (Original) The network switch according to Claim 20, wherein the central processing unit further executes a function including encapsulating the data packet in an encapsulation packet.

24. (Original) The network switch according to Claim 23, wherein the determining function is comprised of retrieving a second mapping from the storage unit, the second mapping having the location data corresponding to the device and a respective multicast address to be used as the destination address of the encapsulation packet.

25. (Original) The network switch according to Claim 24, wherein the location data is comprised of a routing domain.

26. (Currently Amended) The network switch according to Claim 20, wherein the storage unit stores a second mapping, the second mapping having a ~~location data~~ coverage zone area range data for the coverage zone and at least one corresponding communication interface to be used to transmit the encapsulation packet, and wherein the determining function includes evaluating the second mapping to determine the at least one communication interface to be used to transmit the encapsulation packet based on the ~~location data~~ coverage zone area range data which includes the location data.

27. (Original) The network switch according to Claim 26, wherein the location data range is a range of global positioning coordinates and the location data includes global positioning data.

28. (Original) The network switch according to Claim 19, wherein the data packet includes streaming data.